



# Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

**Subject:**  
**Coring Policy for**  
**Thickness Determination**

**CONSTRUCTION MEMORANDUM No. 01-43**  
**OPERATIONS POLICY 11-1000**

**Effective: September 3, 2001**

**Expires: Indefinite**

This memorandum supercedes Construction Memorandum 00-43, dated February 2, 2000 and supplements Construction Memorandum No. 95-42 dated January 3, 1995. This policy applies to all contracts containing the Pavement Thickness Determination for Payment (BDE) Special Provision.

Both permanent and temporary pavement thickness shall be measured by coring.

The coring operation shall be performed after the pavement surface tests and all corrective grinding have been completed according to Article 407.09. Adjustments made in the contract unit price for pavement thickness will be in addition to and independent of those made for the profile index.

The coring operation consists of the following parts:

- Determination of Lots and Sublots
- Determination of Core locations
- Coring operation
- Remedial action if necessary
- Determination of payment

## DETERMINATION OF LOTS AND SUBLOTS

The Resident Engineer/Technician will complete the determination of lots and sublots using as built plan sheets.

Each pavement pay item is treated separately in the determination of Lots.

The first step is to identify all pavement items to be cored under this provision. Next, determine the number of lots contained within the contract for each pay item to be cored. The pay items to be cored are first divided into approximately equal lots of not more than 5000 ft (1500 m) in length. Short lengths of pavements (i.e. ramps, turn lanes) less than 5000-ft (1500 m) shall be grouped together. Short segments between structures will be measured continuously with the structure omitted. To determine the number of lots, divide the total length of the pay item by 5000 feet (1500 meters). (Rest area, parking areas and other similar locations should be divided into approximately 12' (3.6 m) wide pavement segments and these segments logically "stationed" for the purpose of determining the pavement lots and sublots.) The number of lots is equal to this quotient rounded to the next whole number, unless it is already a whole number. If the pay item includes more than one lot, the area represented by the first lot shall

extend from the beginning of the pay item and running in that lane to the end of the contract. If the entire distance represented by the lot is not covered before the end of the project, the remainder of the lot shall be continued from the beginning of the pay item in an adjacent lane until the full length of the lot is covered. Subsequent lots shall then be made up beginning at the end of the previous lot and proceed as described above. The final lot shall consist of the combination of short lengths of pavements as described above. The width of a lot will be the width from the pavement edge to the adjacent lane line, from one lane line to the next or between pavement edges for single lane pavements.

Each Lot shall then be subdivided into 10 sublots of equal length. The width of each sublot equals the width of the lot.

#### DETERMINATION OF CORE LOCATIONS

Bureau of Project Implementation/Construction personnel (other than staff directly assigned to the contract) will determine a random core location for each sublot using the central Bureau of Construction's procedure.

The core locations will be forwarded to and laid out by the Resident Engineer/Technician.

#### RIGHT OF DISCOVERY

If the Engineer has reason to believe that the random core selection process will not accurately represent the true conditions of the work additional cores may be ordered by the Engineer. The Engineer will provide a written explanation to the Contractor for requiring additional cores.

#### CORING OPERATIONS

Coring shall be conducted using procedures and equipment that will produce undamaged and undistorted two-inch (50 millimeter) diameter cores.

One two-inch (50 millimeter) core shall be taken per sublot at the location directed by the Engineer.

The Contractor shall complete all work necessary to perform the coring operation; (i.e. traffic control and back filling core holes.) All cost necessary in completing the coring operations is included in the pavement pay item.

The Contractor shall restrict coring to the number of concurrent operations approved, in advance, by the district. Both the Contractor and the Bureau of Operations/ Maintenance/ Phase III (Various/Various) Consultant shall witness the entire coring operation and measurement of each core. A Phase III consultant assigned to construction inspection on the contract shall not be used to witness the coring operation. Each core shall be measured immediately upon removal from the core bit in a measuring device supplied by the Engineer. The Bureau of Operations/ Maintenance/ Phase III (Various/Various) Consultant will record the core location and lengths on the Pavement Coring worksheet. Both the Bureau of Operations/ Maintenance/ Phase III (Various/Various) Consultant and the Contractor shall sign the Pavement Coring worksheet, attesting to the accuracy of location and lengths of the cores. Upon

concurrence of length, the core samples may be discarded. If an agreement on the core measurement is not reached, the core will be placed in a container supplied by the Bureau of Operations/ Maintenance/ Phase III (Various/Various) Consultant, sealed, labeled and stored by the Bureau of Implementation/ Construction. The core length determined by the Bureau of Operations/ Maintenance/ Phase III (Various/Various) Consultant will be used in the calculation for payment and or remedial action.

The core holes shall be immediately backfilled with a rapid hardening mortar of the types shown on the department's most current approved list of packaged, dry, rapid hardening cementitious materials for concrete mixtures. The mortar shall be placed in the core hole, rodded sufficiently to consolidate the mix and struck off flush with the adjacent pavement.

### REMEDIAL ACTION

During the coring operations if a subplot is determined to be deficient the contractor shall immediately make the decision as to whether to take 3 additional cores in accordance with the special provision "Pavement Thickness Determination for Payment". These cores will be averaged with the first core and an average core value calculated. This average core value is used to determine if the pavement is deficient and is used only for the purpose of remedial action treatment for the subplot. The original core thickness will be used in the lot analysis for determination of payment.

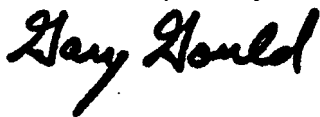
After the coring operations the Contractor shall address any deficient sublots or deficient lots of pavement with the district. The remedial actions taken shall be those listed in the special provision "Pavement Thickness Determination for Payment".

After all deficiencies are corrected the district shall provide in writing to the Central Bureau of Construction the resolution of the deficiencies. The coring operations shall be repeated for those previously specific deficient areas which were corrected.

### CORE ANALYSIS

After the completion of the coring operation, the Resident Engineer/ Technician will analyze all subplot core measurements and calculate a separate total pay factor for each pavement pay item.

A copy of these results and the calculation of the pay factor(s) will be distributed to the Central Bureau of Construction and the Contractor. The original shall be placed in the contract files. This pay factor will be in addition to any other pay factors incurred for this particular project. Using the final quantity of pavement placed, the district shall submit an authorization establishing an incentive/disincentive unit price calculated for each pay item in accordance with Construction [Memorandum No. 4](#). A copy of the completed core analysis worksheet and pay factor calculation shall accompany the authorization or submitted separately if no authorization is required.



Gary Gould  
Engineer of Construction



Joe Hill  
Engineer of Operations